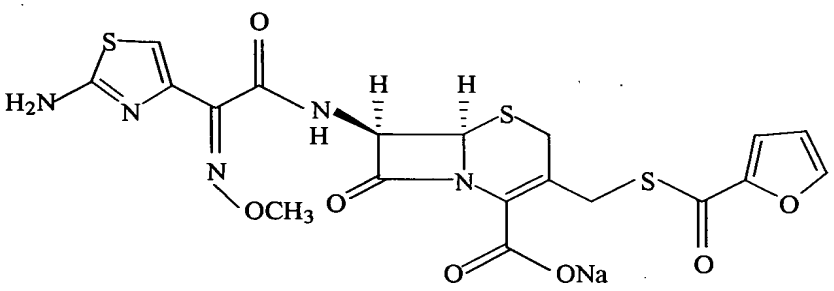
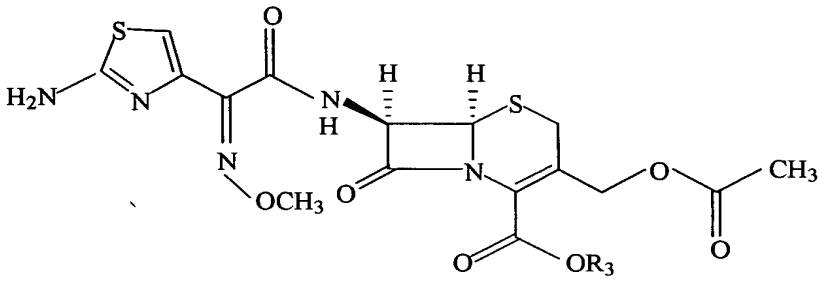
We claim:

1. A process for preparation of ceftiofur sodium of formula (Ib) possessing high stability and having purity of more than 97% and substantially free of impurities, comprising



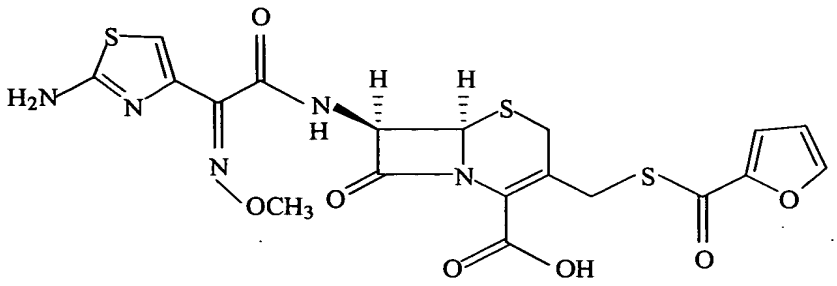
(Ib)

i) reacting cefotaxime or its salts or its esters of formula (VI)



(VI)

wherein R_3 is hydrogen , an alkali or alkaline earth metal, or an easily hydrolysable ester, with thiofuroic acid, employed in a molar proportion of 1.5 to 3.0 moles per mole of compound (VI), in the presence of acetonitrile as solvent and in the presence of large excess of methanesulfonic acid, employed in molar proportions of 12 to 18 moles per mole of compound (VI), and at a temperature of between –5 ^{0}C to 30 ^{0}C to give after necessary neutralisation of the alkali or alkaline earth metal or removal of the ester group of the 4-carboxylic acid function, wherever applicable, ceftiofur of formula (Ia), possessing high stability and having purity of more than 97% and substantially free of impurities;



(Ia)

ii) converting the ceftiofur of formula (Ia) thus obtained to its salt with an organic amine by treating a solution of ceftiofur in a mixture of water and a water-miscible organic solvent with an organic amine, at a temperature ranging from $-10\ ^0C$ to $10\ ^0C$;

iii) reaction of the amine salt thus obtained with a sodium metal carrier in a mixture of water and water-miscible organic solvent and in presence of sodium hydrogen sulfite to give ceftiofur sodium of formula (Ib)

2. A process according to claim 1, wherein the temperature is between 10^0 C to 30^0 C, preferably between 15^0 C to 30^0 C

3. A process according to claim 1, wherein the water-miscible organic solvent is selected from acetone, tetrahydrofuran, acetonitrile, methanol and ethanol.

4. A process according to claim 1, wherein the organic amines are selected from of triethyl amine, diethylamine, cyclohexylamine, tertiary butyl amine and benzyl amine.

5. A process according to claim 4, wherein the organic base is employed in molar proportions of 1.0 to 3.0 moles per mole of ceftiofur (Ia). preferably in molar proportions of 1.2 to 1.5 moles per mole of ceftiofur (Ia).

6. A process according to claim 1, wherein the sodium metal carrier is selected from the group of sodium hydroxide, sodium carbonate, sodium bicarbonate, sodium ethoxide, sodium acetate, sodium propionate, sodium-2-ethyl hexanoate, and sodium of 2-ethylcaproate.